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**AIRLINE SAFETY & SECURITY: AN  
INTERNATIONAL PERSPECTIVE**

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International Federation of Airline Pilots' Associations

**"ENHANCING AIRCRAFT SURVIVABILITY -- A VULNERABILITY PERSPECTIVE"**

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Naval Postgraduate School  
Monterey, California

## AIRLINE SAFETY & SECURITY: AN INTERNATIONAL PERSPECTIVE

ADMIRAL GORMLEY, LADIES AND GENTLEMEN, IT IS WITH GREAT PLEASURE THAT I AGAIN SPEAK WITH YOU OF "THE VIEW FROM THE FLIGHT DECK" ON THE SUBJECT OF AIRLINE SAFETY AND SECURITY..... YOUR INTEREST IS TRULY APPRECIATED. I NOTE THAT SINCE I HAD THE PRIVILEGE OF ADDRESSING MANY OF YOU IN ST. LOUIS IN OCTOBER OF 1993 ADPA AND NSIA HAVE FORMALLY JOINED TOGETHER BECOMING NDIA. MAY I CONGRATULATE YOU ON SO DOING.

AS THE FIELD OF INTERNATIONAL CIVIL AVIATION IS SUCH A HIGHLY VISIBLE AND THEREFORE OFTEN CHOSEN TARGET OF THE TERRORIST, WE IN THE BUSINESS OF COMMERCIAL AVIATION MUST ALWAYS STRIVE TO PROTECT THE LIVES OF OUR PASSENGERS, CREW, AND GROUND PERSONNEL; AND THE SAFETY OF OUR AIRCRAFT AND AIRPORTS REGARDLESS OF WHETHER THE THREAT IS ONBOARD THE AIRPLANE FROM A HIJACKING OR EXPLOSIVE DEVICE, A DEVICE PLANTED WITHIN OUR AIRPORT, OR FROM OUTSIDE THE AIRCRAFT OR AIRPORT IN THE FORM OF A MISSILE. IT IS ONLY THROUGH COOPERATION, COORDINATION, AND COMMUNICATION THAT THESE THREATS CAN BE MANAGED. TO THAT END, I WISH TO CONGRATULATE, ON BEHALF OF IFALPA, THE ORGANIZERS AND SPONSORS OF THIS SYMPOSIUM FOR THEIR EFFORTS. I AM VERY MUCH LOOKING FORWARD TO OUR UPCOMING SESSIONS.

THE SUBJECT OF AIRCRAFT SURVIVABILITY IS SO FUNDAMENTAL TO OUR MISSION OF SAFE TRANSPORTATION OF OUR PASSENGERS AND OUR FREIGHT REGARDLESS OF WHAT TOTALLY UNEXPECTED EVENTS MAY TAKE PLACE ON OUR FLIGHT, THAT WE CONSIDER IT TO BE ONE OF THE BASIC TECHNOLOGIES ON WHICH THE FUTURE OF OUR INDUSTRY DEPENDS.

I WOULD LIKE TO PARTICULARLY ACKNOWLEDGE PROF. BALL, WHO, THROUGH HIS TEXT, THE FUNDAMENTALS OF AIRCRAFT COMBAT SURVIVABILITY ANALYSIS AND DESIGN, CONTRIBUTED SO MUCH TO MY UNDERSTANDING OF THOSE FUNDAMENTALS AS THEY APPLY IN THIS PRESENTATION

I ADDRESS YOU TODAY ON BEHALF OF THE INTERNATIONAL FEDERATION OF AIR LINE PILOT'S ASSOCIATIONS OR **IFALPA**. IFALPA IS A WORLDWIDE FEDERATION OF PILOT REPRESENTATIVES OF 97 COUNTRIES AROUND THE WORLD. THE FEDERATION IS HEADQUARTERED IN LONDON SERVING PRIMARILY AS A TECHNICAL ORGANISATION WITHOUT A POLITICAL AGENDA.

IT MAY BE HELPFUL TO SET THE STAGE BY PROVIDING A BIT OF BACKGROUND ABOUT **IFALPA'S SECURITY COMMITTEE** AND ITS PURPOSE. IFALPA'S SECURITY COMMITTEE WORKS WELL DESPITE THE FACT THAT ITS MEMBERSHIP COMES FROM VERY DIVERSE BACKGROUNDS ACROSS THE

WORLD. THIS BECAUSE OF ITS SINGULARITY OF PURPOSE. THE PREMISES OF AVIATION SECURITY ARE SO SPECIFIC THAT WE ARE IN VERY CLOSE ACCORD ON VIRTUALLY ALL AVSEC PRINCIPLES SO CLOSELY RELATED TO THE SAFETY OF OUR PASSENGERS WHO ENTRUST THEIR LIVES AND THOSE OF THEIR LOVED ONES INTO OUR HANDS. MAY I INQUIRE AS TO HOW MANY OF YOU SUBCONSCIOUSLY COUNTED ON THAT TRUST WHEN YOU DEVELOPED YOUR TRAVEL PLANS FOR OUR SYMPOSIUM?

WE SPEAK WITH ESSENTIALLY ONE VOICE THAT IS IN MANY RESPECTS VERY CLOSE TO THOSE OF THE INTERNATIONAL CIVIL AVIATION **ORGANISATION (ICAO)**, THE INTERNATIONAL AIR TRANSPORT **ASSOCIATION (IATA)**, AND AIRPORTS COUNCIL INTERNATIONAL (ACI). HENCE, WE WORK IN VERY CLOSE ACCORD WITH THOSE ORGANISATIONS.

SANDRA MEADOWS, IN THE SEPTEMBER ISSUE OF "NATIONAL DEFENSE", STATED THAT "MORE U.S. SERVICE MEN HAVE LOST THEIR LIVES TO TERRORISTS DURING THE PAST 20 YEARS THAN HAVE BEEN KILLED IN COMBAT, ACCORDING TO PENTAGON ESTIMATES".

IN THE WORDS OF BRIG. GEN. JAMES CONWAY, USMC, DEPUTY DIRECTOR FOR COMBATING TERRORISM, JCS, "MILITARY COMMANDERS DEPLOYED OVERSEAS, PARTICULARLY, ARE ACUTELY AWARE THAT TERRORIST FORAYS AGAINST U.S. FORCES WILL NOT ONLY LEAD TO CASUALTIES BUT ALSO TO THE LOSS OF PUBLIC SUPPORT FOR MILITARY DEPLOYMENTS."

"POTENTIAL U.S. ENEMIES KNOW THAT THIS COUNTRY, DESPITE ITS OVERWHELMING MILITARY MIGHT, HAS A '**CRITICAL VULNERABILITY**'. BECAUSE THE AMERICAN PUBLIC CAN SEE EVENTS UNFOLD ON LIVE TV, U.S. ENEMIES KNOW THAT AT THE SIGHT OF BLOODSHED, AMERICANS WILL IMMEDIATELY QUESTION THE PURPOSE OF THAT MILITARY MISSION -- AND WHETHER IT IS WORTH U.S. LIVES. THAT MEANS A THIRD WORLD NATION CAN GET AT OUR NATIONAL POLICIES' BY DOMINATING THE SIX O'CLOCK NEWS, SAYS GEN. CONWAY".

AN ACT OF **TERRORISM**, OR EVEN AN ACCIDENT THAT IS PERCEIVED TO HAVE BEEN RESULTING FROM AN ACT OF TERRORISM AGAINST OUR INDUSTRY SENDS THE PUBLIC SCURRYING TO THEIR TELEPHONES TO CANCEL THEIR AIR TRAVEL PLANS.

**"TERRORISM -- THE THEATRE OF THE OBSCENE."** I STRONGLY SUGGEST THAT WE -- THE MILITARY AND THE AIRLINE INDUSTRY -- HAVE A COMMON THREAT HERE OF MAJOR PROPORTION AND MASSIVE DIVERSE POTENTIAL IMPACTS. NOT ONLY DO WE BOTH LOSE LIVES; YOU LOSE PUBLIC SUPPORT; WE LOSE BUSINESS. THE PUBLIC, INCLUDING THE TRAVELING

PUBLIC, EXPERIENCES A PSYCHOLOGICAL IMPACT THAT CAN AND OFTEN DOES RESULT IN A REDUCTION OF THEIR FAITH IN GOVERNMENT AND INDUSTRY; MANIFESTING AS THE LOSS OF THE PEACE OF MIND AND A PART OF THAT DEEP FEELING OF INNER SECURITY HOPEFULLY EXPERIENCED BY A POPULATION. FURTHER, AVIATION SECURITY IS A NATIONAL SECURITY PROBLEM.

**"MEETING SURVIVABILITY AND SAFETY CHALLENGES FOR THE 21ST CENTURY"**...THERE HAS BEEN SINCE THE LOSS OF TWA 800 A FUNDAMENTAL SHIFT WITHIN THE UNITED STATES GOVERNMENT AND THE AVIATION INDUSTRY. THERE IS NOW AN AGREEMENT THAT THERE SHOULD BE A NEW BASELINE OF SECURITY; AN UPGRADING OF SECURITY WITHIN OUR INDUSTRY THAT SETS A NEW "BOTTOM RUNG OF THE LADDER", SO TO SPEAK. IN ACCORDANCE WITH THIS CONCEPT, THE BASELINE WORKING GROUP OF THE GORE COMMISSION WAS CREATED. AMONG THE RECOMMENDATIONS OF THIS GROUP (CONSISTING OF REPRESENTATIVES OF INVOLVED GOVERNMENT AGENCIES, AND VARIOUS INDUSTRY GROUPS) ARE: A BROAD EMPLACEMENT OF FAR MORE SOPHISTICATED EXPLOSIVES AND WEAPONS DETECTION SYSTEMS (COMPUTED TOMOGRAPHY AND UPGRADED X-RAYS), IMPROVED SELECTION AND TRAINING FOR THOSE WHO WILL BE OPERATING THE EQUIPMENT, AND ASSESSMENT OF THE VIABILITY OF ANTI-MISSILE DEFENSE SYSTEMS.

WE AT IFALPA BELIEVE THAT THE GREATEST SINGLE AVIATION THREAT IS THE SENSELESS DESTRUCTION OF AIRCRAFT IN FLIGHT; THIS GENERALLY, BUT CLEARLY NOT ALWAYS, DUE TO EXPLOSIVE DEVICES BROUGHT ON BOARD AIRCRAFT IN CARRY-ON AND CHECKED BAGGAGE.

RECALLING INTERPOL'S **TERRORISM STATISTICS** INDICATING BOMBINGS TO BE THE MODUS OPERANDI IN 35 PERCENT OF 1995 INCIDENTS, AND OUR INDUSTRY'S RECORD; I WOULD BELIEVE THIS TO BE A VERY MUCH ONGOING THREAT IN THE YEARS TO COME. THEREFORE, WE LOOK WITH PARTICULAR INTEREST AT INCORPORATION INTO AIRCRAFT DESIGN THE MEASURES WHICH FOCUS MOST DIRECTLY AT VULNERABILITY PERSPECTIVES ASSOCIATED WITH INFLIGHT INTERNAL EXPLOSIONS. HOWEVER, AS OUR INDUSTRY DOES FACE OTHER THREATS, AS WELL, WE MUST BROADEN OUR CONCERN TO INCLUDE VARIOUS OTHER DEFENSIVE MEASURES IN THE OVERALL FIELD OF INCORPORATION OF SECURITY INTO AIRCRAFT DESIGN, OR "ISAD".

IFALPA SUGGESTS THAT THE DEVELOPING AIRCRAFT TYPES BE EQUIPPED WITH SUITABLE CARGO HOLD BOMB PROOFING MODIFICATIONS WHICH PROVIDE PROTECTION TO ESSENTIAL CONTROLS AND HYDRAULIC LINES. WE STRONGLY ENDORSE THE **AIRCRAFT AND CONTAINER HARDENING PROGRAMS** OF THE FAA. WHILE THE AIRCRAFT HARDENING PROGRAM HOLDS

CONSIDERABLE PROMISE, ECONOMICS DICTATE THAT THE MAJORITY OF SUCH MEASURES WILL BE INCORPORATED INTO FUTURE AIRCRAFT AND POSSIBLY CERTAIN AIRCRAFT FLYING INTO THE HIGHER RISK THEATRES, RATHER THAN RETROFITTING EXISTING FLEETS OF AIRCRAFT. THESE MEASURES ARE THE TYPICAL VULNERABILITY REDUCTION TECHNIQUES, SUCH AS PROTECTION OF CRITICAL STRUCTURE, COMPONENTS, AND SYSTEMS, BOTH THROUGH HARDENING AND INCREASED REDUNDANCY.

A SENSIBLE APPROACH, WHICH SEEMS TO BE OF CONSIDERABLY LESS ECONOMIC AND OPERATIONAL IMPACT, IS THE **HARDENING OF BAGGAGE / CARGO HOLDS** OR THE HARDENING OF BAGGAGE CONTAINERS. TESTS HAVE BEEN RECENTLY CONDUCTED USING SURPLUSED AIRFRAMES, BOTH HERE AND IN THE UNITED KINGDOM. SEVERAL PROTECTIVE MATERIALS WERE LAYERED ONTO THE WALLS OF CARGO HOLDS WITH RESULTANT CONSIDERABLE MITIGATION OF THE DESTRUCTIVE EFFECTS OF THE TEST EXPLOSIVES. HARDENED CONTAINERS OF THE "LD-3" TYPE, COMMONLY USED IN WIDE-BODIED AIRCRAFT, WERE TESTED. THESE HARDENED CONTAINERS WERE QUITE EFFECTIVE. THERE NEED BE SOME FURTHER IMPROVEMENTS IN THE DOOR MECHANISMS, HOWEVER, FOR OPERATIONAL REASONS. SMALLER SIZED CONTAINERS FOR NARROW-BODIED AIRCRAFT ARE BEING DESIGNED AT THE PRESENT TIME. IT IS EXPECTED THAT BY THE END OF THE YEAR THERE WILL BE 20 TO 40 HARDENED CONTAINERS BEING OPERATIONALLY TESTED ON BOARD THE AIRCRAFT OF US AIRLINES. WE WOULD ENVISION THAT EVENTUALLY ONE OR TWO HARDENED CONTAINERS WILL BE DEPLOYED ON MANY AIRCRAFT THE WORLD OVER. THE REAL VALUE OF THE CONTAINERS IS THAT, DUE TO THEIR CAPABILITY OF WITHSTANDING A MODEST EXPLOSIVE CHARGE, WHEN IN COMBINATION WITH THE USE OF EXPLOSIVE DETECTION EQUIPMENT, THE MINIMUM QUANTITY OF EXPLOSIVE NECESSARY TO BE DETECTED IS RAISED TO A SIZE THAT PERMITS OPERATION OF THE EXPLOSIVE DETECTION EQUIPMENT AT A FAIRLY HIGH THROUGHPUT OF BAGS WHILE ENJOYING A LOW FALSE ALARM RATE. THIS MAKES IT OPERATIONALLY FEASIBLE TO ACCOMPLISH "100 PER CENT" DEPARTURE BAG CHECKING

ON A PERSONAL NOTE, IN VIEW OF THE BACKGROUND OF MANY OF YOU HERE TODAY, I SHOULD LIKE TAKE THE LIBERTY ONCE AGAIN, AS I DID FOUR YEARS AGO, TO DIGRESS A MOMENT FROM MY PRESENTATION, ..... TO SPEAK WITH YOU NOT AS A REPRESENTATIVE OF IFALPA, BUT AS PETER REISS; THE PERSON. THESE REMARKS ARE BEING DELIVERED TO YOU TODAY BY ONE WHO PERSONALLY FLEW MAC CONTRACT AND CRAF FLIGHTS OVER A PERIOD OF 27 YEARS, IN SUPPORT OF THE EFFORTS IN SOUTHEAST ASIA, EUROPE, AND THE PERSIAN GULF. I WOULD LIKE FURTHER TO SHARE WITH YOU A MATTER OF DEEP PERSONAL SIGNIFICANCE TO ME. IN MY 31 YEARS OF FLYING HEAVY TRANSPORT AIRCRAFT, THE MOST EMOTIONALLY AND

SPIRITUALLY REWARDING MOMENTS OF MY CAREER, WERE THE CRAFT FLIGHTS BRINGING OUR PERSONNEL HOME FROM SAUDI ARABIA IN EARLY 1991. I SHALL ALWAYS FEEL A QUIET AND INTENSE PRIDE. NOW, BACK TO MY PRESENTATION.....

I WILL BRIEFLY TOUCH UPON OTHER VULNERABILITY REDUCTION CONSIDERATIONS THAT IFALPA RECOMMENDS: THE DEVELOPMENT OF IMPROVED SMOKE/FIRE WARNING DEVICES AND EXTINGUISHING EQUIPMENT IN THE CARGO HOLDS; DIRECTION OF AIR-FLOW AWAY FROM THE COCKPIT AREA; AND DESIGN FOR EASE OF SEARCH / INHIBITION OF CONCEALMENT. THESE CONSIDERATIONS ARE UNDER STUDY BY THE ISAD WORKING GROUP AT THE INTERNATIONAL CIVIL AVIATION ORGANIZATION, AND WILL LIKELY BE INCORPORATED INTO THE APPROPRIATE ANNEXES IN THE NEAR FUTURE.

WHEN VULNERABILITY REDUCTION CONSIDERATIONS LEAD TO RECOMMENDED MODIFICATIONS TO THE AIRCRAFT ITSELF, WE MUST ALSO ADDRESS POSSIBLE RESULTANT COST TO THE MANUFACTURER, AND, SUBSEQUENTLY TO THE OWNER AND OPERATOR; AND THE POTENTIAL IMPACT ON THE OPERATION OF THE AIRCRAFT'S SYSTEMS THEMSELVES. LET US LOOK AT THE AFTERMATH OF THE EXPLOSION OF TWA 800. WHILE I HAVE NO PARTICULAR JUDGMENT REGARDING, OR SUGGESTION AS TO THE APPROPRIATENESS OF, THE URGENT RECOMMENDATIONS EARLIER THIS YEAR OF THE NATIONAL TRANSPORTATION SAFETY BOARD, I SEE MANY POTENTIAL IMPACTS THEREFROM. I AM SPECIFICALLY REFERENCING, AMONGST OTHERS, THE CARRIAGE OF EXTRA FUEL, REDUCED USE AND MOVING OF AIR CONDITIONING PACKS, AND MOVING OF THE FUEL PUMPS.

THE COST OF RETROFIT -- SEVERAL MILLIONS OF DOLLARS EACH FOR THE 1,000+ BOEING 747'S IN SERVICE TODAY MUST BE CAREFULLY CONSIDERED. IFALPA SUGGESTS THAT THE COST OF CARRIAGE OF NON-USABLE FUEL IN THE CENTER TANK -- IN THE ECONOMICS ARENA -- IN REDUCED USEFUL LOAD CARRYING CAPABILITY, AND THE INCREASE IN THE LIKELIHOOD OF FIRE IN A CATASTROPHIC LANDING ACCIDENT MUST BE VERY CAREFULLY STUDIED BEFORE ANY APPLICATION OF A MANDATED POLICY IS EVEN CONSIDERED, LET ALONE SUGGESTED OR PROMOTED. I WOULD MOST FERVENTLY HOPE THAT ANY SUCH VULNERABILITY REDUCTION MEASURES ARE BASED UPON VERY HARD EVIDENCE THAT SUCH MEASURES ARE NECESSARY AND APPROPRIATE FOR THE TRUE RISK INVOLVED, AND ARE NOT A RESPONSE TO OTHER PRESSURES. IN OUR STUDIED OPINION, THE CAUSE OF THE CATASTROPHIC INFLIGHT BREAK-UP OF TWA 800 IS STILL A VERY MUCH UNSOLVED QUESTION.

MAY I SUGGEST THAT THE MORE RECENT RECOMMENDATIONS OF THE

NATIONAL TRANSPORTATION SAFETY BOARD TO REDUCE THE EXPLOSIVE POTENTIAL OF THE FUEL ULLAGE, OR VAPOR, WOULD SEEM TO BE LESS INTRUSIVE INTO THE OPERATIONAL AND ECONOMIC ARENAS. AMONG THESE ARE INTRODUCTION OF COOLED FUEL INTO THE CENTER TANK, INERTING THE TANK WITH A NON-REACTIVE GAS, AND INSULATION OF THE TANK TO PROTECT IT FROM THE HEAT GENERATED BY THE AIR CONDITIONING UNITS. HOWEVER, EVEN THESE MEASURES EACH APPEAR TO CREATE THEIR OWN OPERATIONAL PROBLEMS (FOR EXAMPLE, THE OBIGGS SYSTEM ON THE C-17). FURTHER, THERE ARE SAFETY-DIMINISHING IMPACTS AS WELL TIED TO EMPLOYMENT OF THESE PROPOSALS.

WHILE OUR SYMPOSIUM IS FOCUSED ON THE VULNERABILITY PERSPECTIVE, PLEASE BEAR WITH ME WHILE I DIGRESS TO A **SUSCEPTIBILITY** MATTER FOR A MOMENT, AS I WISH TO MENTION TO YOU A KEY ASPECT OF THE NEW SECURITY PARADIGM THAT IS BEING DEVELOPED: PROFILING. WE STRONGLY SUPPORT THE CONCEPT OF "**PROFILING**" OF PASSENGERS. OUR RESPONSES MUST BE THREAT-DRIVEN AND SPECIFIC. IN 1995, MEMBER AIRLINES OF THE INTERNATIONAL AIR TRANSPORT ASSOCIATION CARRIED 1.3 BILLION PASSENGERS WORLDWIDE. THERE WERE FIVE HIJACKINGS THAT INVOLVED REAL WEAPONS. TEN PERPETUATORS WERE INVOLVED. TEN OUT OF 1.3 BILLION... THE RESOURCES AVAILABLE TO OUR INDUSTRY ARE NOT LIMITLESS. THEREFORE, WE MUST TARGET PRIMARILY ON THE HIGHER THREAT AREAS OR INDIVIDUALS, BE IT LOOKING FOR WEAPONS OR BE IT LOOKING FOR EXPLOSIVES -- INCLUDING THOSE IN PASSENGER BAGGAGE, CARRY-ON OR CHECKED.

WE SHARE WITH LAW ENFORCEMENT AGENCIES THE WORLD OVER THE CONCEPT THAT **INTERVENTION BY GROUND FORCES** DURING A HIJACKING IS ONLY A LAST RESORT, ONLY TO BE PERFORMED WHEN ALL ELSE HAS FAILED. WE FURTHER RECOGNIZE THE UNIQUE TACTICAL NATURE OF THIS ACTION, AND THE CRITICAL NEED OF HAVING ONLY HIGHLY AND SPECIALLY TRAINED TEAMS PERFORMING THIS SURGICAL AND EXTREMELY CHALLENGING OPERATION. MAY I SUGGEST THAT HISTORY HAS SHOWN THE POTENTIAL COST AMPLIFICATION OF AN INCIDENT SHOULD AN INTERVENTION BY GROUND FORCES GO AWRY. ON THE OTHER HAND, I SHOULD LIKE TO NOTE THAT THERE ARE EXCELLENT EXAMPLES OF THE VALUE AND CAPABILITY OF A HIGHLY TRAINED AND QUALIFIED SPECIAL OPERATIONS GROUP. THE UNITED STATES IS TRULY TO BE COMMENDED FOR THEIR ATTENTION TO ALL THE DETAILS AND EXPENDITURES NECESSARY TO MAINTAIN IN TOP OPERATIONAL CONDITION THE UNITS AVAILABLE FOR AN INTERNAL INTERVENTION, AND THOSE UNITS AVAILABLE FOR AN EXTRA-TERRITORIAL OPERATION (HERE I SPECIFICALLY REFERENCE GEOGRAPHIC EXTRATERRITORIALITY, AS A UNITED STATES REGISTERED AIRCRAFT IS, REGARDLESS OF LOCATION, UNITED STATES TERRITORY).

I SHOULD LIKE TO SHARE WITH YOU AN INCIDENT THAT TOOK PLACE DURING THIS PAST YEAR. ITS NARRATION, WHILE AMUSING, IS FURTHERMORE A GOOD ILLUSTRATION OF HOW THE SYSTEM WORKS.

AN AIRCRAFT OPERATING INTO AN EASTERN UNITED STATES CITY WAS DELAYED FOR FORTY MINUTES BY WEATHER, RESULTING IN A PLANNED TWENTY-MINUTE OUTBOUND DELAY. SHORTLY BEFORE THIS PLANNED DEPARTURE, A PASSENGER SEATED IN THE MAIN CABIN OF THE AIRCRAFT, WHO WAS DISTURBED BY THIS DELAY MADE THE REMARK TO AN ATTRACTIVE YOUNG WOMAN SEATED NEXT TO HIM, "WELL, I GUESS THAT THEY HAVEN'T FOUND MY BOMB YET". SHE, BEING QUITE STARTLED, RATHER THAN BEING IMPRESSED AS HE HAD HOPED, ASKED HIM WHAT HE HAD JUST SAID. HE REPEATED "WELL, I GUESS THAT THEY HAVEN'T FOUND MY BOMB YET". THIS TIME OTHERS HEARD HIS REMARK. SHE WAS QUITE DISTURBED, AND INQUIRED OF HIM AGAIN, WHEREUPON HE JUST SAT THERE IN HIS HARVARD BUSINESS SCHOOL SWEATSHIRT AND SMIRKED. SHE THEN WENT TO A FLIGHT ATTENDANT, AND -- WE ALL KNOW HOW THE CHAIN OF COMMAND WORKS -- THE CAPTAIN WAS ADVISED.

WELL, IT SO HAPPENS THAT THE COPILOT IS A MEMBER OF THE SECURITY COMMITTEE FOR THAT AIRLINE AND IS A FORMER POLICE OFFICER. WITHIN SEVERAL MINUTES HE AND OUR SELF-STYLED COMEDIAN WERE IN THE TERMINAL DISCUSSING THE MATTER. A MOMENT LATER, OUR SUSPECT WAS IN CONTINUED DISCUSSION WITH AN FBI AGENT AND TWO 6' 6" LOCAL POLICE OFFICERS; AND A BOMB DOG. HE FLATLY AND VEHMENTLY DENIED HIS STATEMENTS; THEY USUALLY DOI HIS FIVE ACCOMPANYING PASSENGERS, INCLUDING HIS BOSS AND HIS BOSS' BOSS WHO WERE IN THE FIRST CLASS CABIN OF THE AIRCRAFT, SOON JOINED THEM WITH ALL OF THEIR BAGGAGE.

THE DOG'S PART OF THE CONVERSATION IS THAT HE ALERTED WITH GREAT INTEREST AND ENTHUSIASM ON A SET OF GOLF CLUBS. IN MORE WAYS THAN ONE, THESE WERE NOT JUST ANY ORDINARY SET OF GOLF CLUBS, SO IT TURNED OUT. WE WILL GET TO THAT..... THE GOLF CLUBS SOON WENT ON THEIR LAST RIDE: TO A REMOTE AREA OF THE AIRPORT. THERE, THEY WERE ASSISTED BY A 1/2 POUND DISRUPTER CHARGE -- INTO THE GREAT BEYOND.

WELL, IT TURNED OUT THAT THESE SIX PASSENGERS WERE ON THEIR WAY TO A MAJOR GOLF TOURNAMENT IN PHOENIX -- 1,200 MILES DISTANT. THE FLIGHT WAS DELAYED FOR AN HOUR AND A HALF, THUS PREVENTING THE AIRCRAFT FROM GETTING TO PHOENIX IN TIME TO FLY A FULL LOAD OF 186 PASSENGERS BACK TO THE EASTERN CITY THAT NIGHT. THIS MEANT THAT IN ADDITION TO BEING CHARGED WITH A FEDERAL CRIMES ABOARD AIRCRAFT STATUTE, OUR "WISE MAN" HAD TO REIMBURSE THE AIRLINE FOR ALL ASSOCIATED LOST REVENUE -- PLACING THOSE 186 PASSENGERS ONTO OTHER AIRLINES, ETC -

LIKELY WELL OVER \$20,000.

OH, YES... YOU WONDER ABOUT THOSE GOLF CLUBS? WELL, THEY WERE A \$6,000 SET OF GRAPHITE CLUBS... AND WHOSE WERE THEY? YES, YOU GUessed IT -- THEY BELONGED TO HIS BOSS.

I HAVE OFTEN WONDERED IF, WHEN HE EXPLAINED TO HIS WIFE HOW THEY WERE SUDDENLY \$20,000 IN DEBT, HE WAS WITHOUT A JOB AND FACING CONVICTION FOR A FEDERAL CRIME, SHE COMMENTED TO HIM ABOUT HOW SHE HAD SOMETIMES WONDERED JUST HOW LONG IT WOULD BE BEFORE HIS BIG MOUTH WOULD GET HIM INTO SERIOUS TROUBLE... . MAY I SUGGEST THAT THAT YOUNG MAN HAS NOW A MUCH CLEARER AWARENESS OF HOW THE SYSTEM WORKS!

I WILL MENTION BRIEFLY TWO AREAS OF REAL CONCERN TO OUR SECURITY COMMITTEE.

**FIRST, ILLICIT CROSS-BORDER MOVEMENT OF NUCLEAR MATERIAL AND OTHER RADIOACTIVE SOURCES.** MAY I SUGGEST THAT THIS TRAFFICKING AND ALL OF ITS POTENTIAL RAMIFICATIONS MAY WELL BECOME ONE OF THE GREATEST THREAT AREAS BY WHICH WE ARE CONFRONTED. MAY WE FURTHER SUGGEST THAT THE SCOPE AND THE DEGREE OF THREAT IS INCREASING AT AN EXPONENTIAL RATE, ESPECIALLY EMANATING FROM THE FORMER SOVIET UNION AND CERTAIN AREAS IN EASTERN EUROPE.

THE INTERNATIONAL ATOMIC ENERGY AGENCY ESTABLISHED A GROUP OF SPECIALISTS FROM A NUMBER OF INTERNATIONAL ORGANISATIONS, INCLUDING INTERPOL, EUROPOL, EURATOM, IFALPA, THE WORLD CUSTOMS ORGANISATION, IATA, AND SEVERAL OTHERS TO DEVELOP RECOMMENDATIONS AND ASSIST IN THEIR IMPLEMENTATION IN THE AREA OF CONTROL OF ILLICIT CROSS-BORDER TRANSFER OF NUCLEAR AND RADIOACTIVE MATERIALS. OUR RECOMMENDATIONS WERE PRESENTED, WITH THE FULL BACKING OF THE IAEA, TO THE "GROUP OF 8" AT THE MOSCOW SUMMIT THIS YEAR.

THE TOTAL LACK OF AWARENESS OF SOME OF THE SMUGGLERS AS REGARDS THE DANGERS OF SIMPLY CARRYING THESE MATERIALS CANCELS OUT EVEN THE BASIC INSTINCTS OF SELF-SURVIVAL. THE DANGERS TO OUR PASSENGERS, CREWS, AND INDUSTRY RANGE FROM DISASTROUS PERSONAL EXPOSURE TO A CONTAMINATED \$160,000,000 AIRCRAFT BEING PLACED OUT OF SERVICE FOR 15 YEARS. MAY I ASK EACH OF YOU HERE TODAY TO IMAGINE, FOR A MOMENT, IF YOU WOULD, A TRAVELER WITH A KILO OF CESIUM-137 IN HIS BRIEFCASE SEATED NEXT TO YOU ON AN EIGHT-HOUR FLIGHT ....IMAGINE THE DISASTROUS CONSEQUENCES TO YOU....

WE FORECAST AS WELL A THREAT OF ONBOARD PRESENCE -- AS A WEAPON -- OF CHEMICAL AND BIOLOGICAL MATERIALS. AS A REPRESENTATIVE OF THE JAPANESE DELEGATION SAID LAST AUTUMN AT THE INTERPOL TERRORISM SYMPOSIUM, "IT IS POSSIBLE FOR EVERY MOTIVATED TERRORIST TO USE THOSE KIND OF WEAPONS NOWADAYS". AS THE CHIEF OF THE COUNTER-TERRORIST UNIT AT INTERPOL (AN AMERICAN FBI AGENT SECUNDED THERETO) SAID, "THE ISSUE OF WMD IS NOT A MATTER OF 'IF', BUT 'WHEN' AND 'HOW OFTEN'".

WE ARE CONVINCED THAT THE SOPHISTICATION OF CERTAIN OF THOSE WHOM ARE DEDICATED TO ACTS AGAINST OUR INDUSTRY, BE THEY OF STRAIGHT CRIMINAL NATURE, OR BE THEY ACTS OF TERRORISM, WILL INCREASE DRAMATICALLY. THE LEVEL OF EFFECTIVENESS OF OUR MEASURES MUST BE DEVELOPED TO A DEGREE THAT WILL CONTINUALLY EXCEED THE CAPABILITY OF "THE BEST AND THE BRIGHTEST" OF THIS TRADE.

IT IS ESSENTIAL THAT WE HAVE A COORDINATED PROACTIVE APPROACH IF WE ARE TO SUCCEED IN MANAGING THE THREAT. THIS REQUIRES INFORMATION AND INTELLIGENCE.

**"STRENGTH THROUGH INDUSTRY AND TECHNOLOGY".....** ON THURSDAY I WAS AT OUR LAYOVER HOTEL IN TOKYO, READING THE JAPAN TIMES. I HAD JUST SPENT SEVERAL HOURS WORKING ON THIS PRESENTATION. A THOUGHT CAME TO MIND AS I READ ABOUT CHUCK YEAGER'S FLIGHT OF CELEBRATION, IN THE F-15, OF THE 50TH ANNIVERSARY OF HIS BREAKING THE SOUND BARRIER IN THE X-1. YOU ALL HAVE COME A LONG WAY DURING THESE LAST FIFTY YEARS IN AIRCRAFT VULNERABILITY REDUCTION TECHNOLOGY. WE ON THE COMMERCIAL SIDE HAVE CERTAINLY BENEFITED THEREFROM, AS HAS THEREBY EVERY SINGLE PASSENGER WHO RIDES ON OUR JET TRANSPORTS TODAY. SOMETIMES THERE SEEM TO BE LOTS OF FOLKS WHO FORGET THAT.....

I SHOULD LIKE TO DIGRESS AT THIS POINT FROM THE VULNERABILITY PERSPECTIVE TO ONE ESPECIALLY IMPORTANT AREA OF AVIATION SAFETY.... A FUNDAMENTAL THAT ENTERS INTO EVERY SINGLE ASPECT OF AVIATION SECURITY AND, IN FACT, EVERY ASPECT OF TRANSPORTATION SAFETY. THAT IS **TEAMWORK**. BE IT ON THE FLIGHT DECK -- AS PART OF THE DOMAIN OF CREW RESOURCE MANAGEMENT, OR IN THE STUDY AND IMPLEMENTATION OF ISSUES OF THREAT RESPONSE -- LONG TERM SUCH AS VULNERABILITY REDUCTION TECHNOLOGY AND ITS IMPLEMENTATION; OR SHORT TERM -- TEAMWORK IS ESSENTIAL. BASED IN PART ON OBSERVATION DURING MY 30 YEARS OF WORK IN AVIATION SECURITY, I AM CONVINCED THAT IT IS THROUGH THE INCREASED JOINT INDUSTRY-GOVERNMENT EFFORTS, DOMESTICALLY AND INTERNATIONALLY, THAT THE IMPACT OF THIS

ESSENTIAL COMPONENT IS MAXIMIZED. IT IS THROUGH OUR COMING TOGETHER AT SYMPOSIUMS SUCH AS THIS THAT WE FORM THE NETWORKS THAT FACILITATE OUR UNDERLYING SUCCESS AND OUR OVERALL PROGRESS. I CANNOT STRESS TOO STRONGLY THE IMPORTANCE OF TEAMWORK -- OF TEAMWORK AND COOPERATION IN THE LONG-TERM SUCCESS OF TRANSPORTATION SAFETY AND SECURITY. I WISH TO CITE THE COMMENTS OF OUR KEYNOTE SPEAKER, JOHN GOGLIA FROM THE NATIONAL TRANSPORTATION SAFETY BOARD, THIS MORNING REGARDING HUMAN FACTORS AS AN EXCELLENT REVIEW OF THE INTERRELATIONS BETWEEN HUMAN FACTORS AND COMMUNICATION IN AVIATION SAFETY IN OUR GLOBAL AVIATION FAMILY.

IN CLOSING, I MAKE ONE REQUEST ON BEHALF OF IFALPA. OUR REQUEST IS THAT YOU LOOK UPON US AS A RESOURCE, A RESOURCE TO BE CALLED UPON AS PART OF THE TEAM. WE HAVE FOR MANY YEARS SERVED, AND WE CONTINUE TO SERVE, AS A PART OF THE GOVERNMENT AND INDUSTRY AVIATION SECURITY TEAM.

AGAIN, WE APPRECIATE YOUR INCLUSION OF US IN YOUR SYMPOSIUM, AND I INVITE YOUR QUESTIONS THIS AFTERNOON DURING OUR PANEL DISCUSSION.

LADIES AND GENTLEMEN, THANK YOU FOR YOUR KIND ATTENTION.